

REMARKS

In the Office action mailed on August 16, 2005, the Examiner considered claims 64-81. Claims 64-71, 74-78 and 80-81 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,587,093 to Aston (“Aston”); claims 64, 66-67, 74, 76-77 and 80 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 2,862,099 to Gage (“Gage”); claim 79 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Aston in view of U.S. Patent No. 5,906,796 to Blevins et al. (“Blevins”); and claims 72-73 were objected to as being dependent upon a rejected base claim, but would be allowable if written in independent form.

Applicants respectfully submit the present Amendment and Response, in which independent claim 64 has been amended. Support for this claim amendment can be found at, for example, page 10, lines 7-8 of the originally-filed application. In addition, dependent claims 65, 71, 72, and 75 have been amended to correspond to the amendment made in independent claim 64. Applicants respectfully submit that no new matter is introduced by the present Amendment and Response.

In view of the amendments to the claims together with the following remarks, Applicants respectfully request reconsideration and withdrawal of all grounds of rejection.

Claims 64-71, and 74-78 and 80-81 stand rejected under 35 U.S.C. § 102(b) as being anticipated by at least one of Aston and/or Gage. For a claim to be anticipated under 35 U.S.C. § 102(b), the cited reference must teach or suggest each and every limitation in the claim. Applicants respectfully submit that neither Aston nor Gage, for the reasons discussed below, disclose every claim element of the claimed invention.

Applicants’ amended independent claim 64 recites a conductive liquid jet cutting system for modifying a workpiece. The conductive liquid jet cutting system includes a dispenser comprising an electrically conductive crucible for dispensing a jet stream of an electrically conductive liquid. Applicants respectfully submit that neither Aston nor Gage teaches or suggests a conductive liquid jet cutting system.

Applicants respectfully submit that both Aston and Gage each disclose arc torch systems that use reactive gases, rather than teaching or suggesting a conductive liquid jet cutting system as claimed by Applicants. Specifically, Aston discloses an arc torch that uses ionizable gas to

produce a plasma for welding applications, see, for example, in the ABSTRACT and col. 1, lines 43-49 of Aston. Gage discloses an arc torch process which uses a reactive gas and a shielding gas for cutting a workpiece, see, for example, col. 1, lines 27-37 of Gage. As a result, both Aston and Gage fail to teach or suggest a conductive *liquid* jet cutting system because both references teach *gas*-based arc torch systems.

Since neither Aston nor Gage teach or suggest a conductive liquid jet cutting system including an electrically conductive crucible for dispensing a jet stream of an electrically conductive liquid as claimed by Applicants, the undersigned respectfully submits that at least this element of Applicants' claim is missing from the cited references. Accordingly, Applicants submit that claim 64 is patentable.

Dependent claim 79 stands rejected under 35 U.S.C. § 103(a) as being unpatentable in view of the combination of Aston and Blevins. To establish a prima facie case of obviousness 1) there must be a motivation to combine the references, 2) there must be a reasonable expectation of success, and 3) the combination must teach or suggest all of the elements of Applicants' claims. Applicants respectfully submit that a prima facie case for obviousness has not been established at least because there is no motivation to combine Aston and Blevins and the combination Aston and Blevins fails to teach or suggest all of the elements of Applicants' claim 64, the claim from which claim 79 indirectly depends. Accordingly, Applicants respectfully request reconsideration and removal of the 35 U.S.C. § 103(a) rejection of claim 79.

Applicants submit that there is no motivation to combine Aston and Blevins because the proposed modification would render the prior art reference unsatisfactory for its intended purpose. Specifically, Aston discloses an arc torch that uses ionizable gas to produce a plasma for welding applications. Blevins discloses a solid phase extraction plate for bio-chemical fluids for analysis. Blevins' extraction plate includes a disk formed of a nonpolar extraction medium (e.g., polypropylene) and containing silica particles bonded with hydrophobic groups. See, for example, column 1, lines 1-7 and column 2, lines 49-59 in Blevins. If the plastic extraction plate and disk of Blevins were used in combination with the plasma arc welding torch of Aston, the plate and disk would be destroyed under the high temperature operating conditions of a plasma arc torch, thereby rendering the prior art invention unsatisfactory for its intended purpose of welding.

Even if the combination was proper, Aston and Blevins fails to teach or suggest a conductive liquid jet cutting system as claimed by Applicants. As discussed above, Aston discloses a gas-based arc torch for welding materials and Blevins teaches a plate for extracting biological liquids. Neither reference teaches or suggests a conductive liquid cutting system including an electrically conductive crucible for dispensing a jet stream of an electrically conductive liquid as claimed by Applicants. As a result, the improper combination of Aston and Blevins fails to teach or suggest all of the elements of Applicants' claim 64, the claim from which claim 79 indirectly depends. Accordingly, Applicants respectfully request reconsideration and removal of the 35 U.S.C. § 103(a) rejection of claim 79.

Claims 65-81 each depend either directly or indirectly from amended independent claim 64. Applicants respectfully submit that claims 65-81 are patentable for at least all of the same reasons that independent claim 64 is patentable.

Applicants note that the Examiner directed Applicants attention to U.S. Patent No. 4,764,656 to Browning in the Office Action dated April 11, 2005, but Browning was not included in a PTO-892 form. Applicants respectfully request that the Examiner provide Applicants with a new PTO-892 form which includes Browning so that the record is complete.

CONCLUSION

In view of the foregoing, Applicants respectfully submit that the claims 64-81 are in condition for allowance and request favorable action. The Examiner is invited to contact Applicants' agent at the number below if in the Examiner's view it would expedite the examination of the application.

The Commissioner is hereby authorized to charge any fee occasioned by the entry of this paper to Attorney's Deposit Account No. 50-3081.

Respectfully submitted,

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Date

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